



3635
1PW

Dear Examiner, Mr. Robert Canfield,

Osaka, 6/23/2005

I am a patent applicant with following attributes.

Application No.	10/084,072
Filing Date	02/27/2002
First Named Inventor	Kiichi Yatani
Confirmation No.	5743
Examiner	Canfield, Robert
Art Unit	3635

I received your " Notice of Abandonment " dated 05/17/2005.

Reading your " Notice ", I am very suspicious about the contents of your paper.
Because, it does not refer to my " Remarks " mailed on 04/11/2005 and " Amended
Specification " mailed on 08/30/2005 to my former Examiner Mr. Kevin McDermott
Which I would like to enclose here in this letter.

Did you sincerely examined above mentioned two documents?

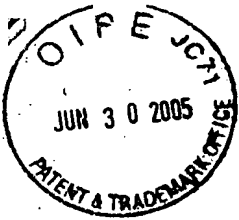
I am wondering how American Patent and Trademark Office succeed the important
documents of applicant from former examiner (Mr.Kevin Macdermott) to present
Examiner (Mr. Robert Canfield),

I would like to ask your honest reply on this matter.

Sincerely Yours,

Kiichi Yatani

Kiichi Yatani



Application Number: 10/084, 072

Group Art Unit Number: 3635

Filing date: 02/27/2002

Name of the examiner who prepared the most recent office action: Mr. Kevin McDermott

Title of invention:

SUPPORT STRUCTURE FOR ISOLATING
EARTHQUAKE MOTIONS

REMARKS

Some Differences between Mr. Gregory R. Brotz's
DAMPENABLE BEARING (Pat. No. 6, 116, 782) and
my invention (SUPPORT STRUCTURE FOR ISOLATING
EARTHQUAKE MOTIONS

Dear Mr. Kevin McDermott,

Thank you for your kind office action dated
March 8, 2004.

I carefully and thoroughly read it and then
would like to appeal to you that there are
some differences between Mr. R. Brots' DAMPENABLE
BEARING and my invention as follows. (continue
next pages)

(1) *Regr*

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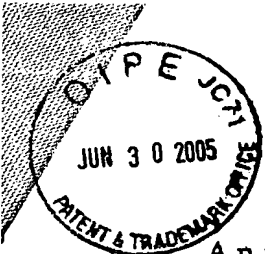
Mr. Kevin McDermott

Title of invention:

SUPPORT STRUCTURE FOR ISOLATING
EARTHQUAKE MOTIONS

Differences between two inventions

Mr. Gregory R. Brotz' Patent (Pat. No. 6/116,782)	My invention Appl. No. 10/084,072
There must be frictions between pressure receiving support bearings.	There is no frictions between large steel balls and small steel balls. They move simultaneously.
There is no free movement to prevent friction of pressure free balls.	Pressure receiving support balls are moved by pressure applying balls, hence no linkage energy is generated.
Object of generation of linkage energy is a structure.	There are no frictions between each balls in which small balls move all directions to make no frictions.
Employed partition board to prevent frictions would generate friction power, by which linkage energy is generated.	There are no objects to prevent free movement of pressure receiving support balls.
There is uncertainty on how linkage movement generated in case of the M. 8 earthquake.	Linkage movement range between column and pressure receiving steel concrete of fundamental hoop is set to be 80cm+80cm in all directions in which spherical π play as shockabsorber.



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Title of invention;

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EARTHQUAKE MOTIONS

To the Commissioner for patents;

I wish to express my hearty thanks for your
kind treatness on my patent application in
details.

Your official actions were sent to me twice
since my application paper was filed in
your office on Feb. 27, 2002.

Copies of U. S. patent references were very help-
ful to me to understand prior arts similar to my
invention.

After careful consulting above cited U. S. patent
references I came to distinguish differences
between Mr. Gregory R. Brott' invention which is
resemble closely in their structures.

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Group Art Unit Number: 3685

Filing date: 02/27/2002

Name of the examiner who prepared
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Mr. Kevin McDermott

Title of invention:

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I am now enclosing the different points
in details between above said two inventions
expecting your cordial understanding.

The full text of amended specification will
be filed in your office accordingly after your
permission.

Waiting your kind next official action,

Very truly yours,

Date: April 12, 2004

Applicant's name: Kiich Yatani

Signature: *Kiich Yatani*



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Group Art Unit Number; 3635

Filing date; 02/27/2002

Name of the examiner who prepared
the most recent office action;

Mr. MCDERMOTT, KEVIN

Title of invention;

SUPPORT STRUCTURE FOR ISOLATING
EARTHQUAKE MOTIONS

Amended SPECIFICATION

SUPPORT STURCTURE FOR ISOLATING EARTHQUAKE
MOTIONS

BACKGROUND OF THE INVENTION;

The present invention has to do with a support structure for isolating earthquake motions, and more particularly, to a structure to prevent a chain bibrations of the structure from earthquake and/or wild storm such as hurrican etc.

Heretofore, conventional earthquake-proof constructions are based on methods to alleviate gearing of earthquake motions by intermediately connecting elastic materials such as springs, rubber, lead, and balancer etc. between said

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foundation and bottom of structure.

Present invention is to provide another unique
method to isolate linkage vibration of the
earthquake and wild storm to above upper part of
a structures taking advantages of friction-
less nature in point contact rolling of a number
of large and small steel balls rolling in point
contact.

SUMMARY OF THE INVENTION:

The present invention is designed was made to
put a constructions on a collective block of fri
ctionless large and small steel balls.

Explaining my invention in more detail, the

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device is designed to interpose large and small balls between pressure-receiving spherical curved steel plate and pressure-applying spherical curved steel plate surfaces as shown in annexed drawings (Fig. 2-A~Fig. 2-C), hence transmission of earthquake motions are isolated by above said rolling of two types of balls interposed between the two curved spherical surfaces as soon as earthquake occurs. This is the case just like the case of a ship on the water, in which we have no earthquake feeling since trembles are isolated by allowing the waving water to receive and transform them into rolling forces of the water wave.

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A preferred form of the present invention is
illustrated in the accompanying drawings in
which;

Fig. 1 is a plan view of the invention showing a
foundation hoop trembled from the east to the
north direction.

Fig. 2-A is a sectional view of a composition of
fundamental foundation hoop, a column, and a
foundation showing a frictionless slide of the
invention.

Fig. 2-B is a sectional view of a main portion
of the invention where the large and small balls
arranged between two spherical steel plates
showing a frictionless slide part of the inven-
tion.

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SUPPORT STRUCTURE FOR ISOLATIONG
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Fig. 2-C is a enlarged sectional view of the same portion of the invention where large balls and small balls are shown in large scale.

Fig. 2-D is a sectional view of a foundation portion with a colum in image.

Fig. 3 is a imaginary view of a linkage movement of a foundation hoop when an earthquake occurs.

Fig. 4 is a perspective view of a sliding frame for sliding balls when earthquake motions were isolated.

Fig. 5 is a perspective view of the hoop of the invention.

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Fig. 6 is a perspective view of the hoop of the
invention.

Fig. 7 is a perspective view of the portion which
closed for large balls and opened for small
balls.

Fig. 8 is a sectional view of press working of
a concave curved surface and a convex curved
surface.

Fig. 9 is a partial perspective view of a holes.

Fig. 10 is a partial perspective view of a fric-
tionless sliding concave portion.

Referential numerals in the drawings;

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Title of invention:

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2--connecting bolts of for conncting a convex
curved surface and with concave curved surface

3--pressure-receiving large steel balls (10.318mm9 in
usual case)

4--rolling unifying small balls (8.73mm in usual case) in
point contact

5--concave steel plate with pressure-receiving
surface

6--convex steel plate with pressure-applying
spherical surface

7--ball aligning frame

8--sodium silicate

9--column

10--liquid replenishing pipe

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11--liquid sealing packing

12--polybinyll chloride ball cover

13--concrete covering all the surface of top

and bottom steel plate

14--connecting steel frame for hoop tightening

15--connecting steel frame for hoop-tightening

16--iron and steel reinforced concrete block

17--bolts for pressing ball surface

18--pressing bolts and nuts

19--tightening portion for balls

20--concrete frame

21--pressing slot

22--iron frame for ball surface

23--foundation hoop (same as numeral 1)

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24--hoop tightening frame

25--ball sliding block

DETAILED DESCRIPTION OF THE INVENTION;

According to my invention, large steel balls (3)
and small steel balls (4) are interposed between
pressure-receiving spherical curved steel plate 5
and pressure-applying steel plate (6) as shown in
the drawing 1 (Fig 2-A~Fig. 2-C).

The peripheral scales of these plates are adjusted
with that of a bottom of a structure such as a
house or building to be built.

These plates are made of steel and used as a
ball receiver.

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The shape of said pressure-receiving plate (5) is recessed concave formed one and another pressure applying plate (6) is convex formed one.

These opposing facing spherical plates are used as foundation of the building and also for the purpose of isolating earthquake mortions as described follows.

Pressure-receiving steel balls (3) and pressure-applying small balls (4) with (less accuracy) smaller diameter than that of pressure-receiving large balls are mounted to come in point contact in all direction.

The pressure-receiving concave curved surface (5) is supported by the pressure-receiving steel

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balls (3) and as soon as earthquake would occurs,
the linkage of earthquake motions to the building
is
isolated by the rolling slide of said pressure-
receiving steel balls (3).

As to the structure of the foundation, a concrete
material covering all the surface of top and
bottom steel plate with large balls and small
balls interposed between them except curved
surfaces of the top and bottom plates constitutes
a colum (9) and the same apples to the foundation.

The colum (9) including the pressure-applying
convex-curved surface is jointed to the found-
ation including pressure-receiving concave-

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SUPPORT STRUCTURE FOR ISOLATIONG
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When the pressure-receiving balls (3) are rolled by the earthquake motions, small bolls (4) interposed throughout the whole periphery of said large balls (3) are rolled simultaneously, in which, as before described, the rinkage of earthquake motions to the structure or building is isolated by the rolling slide of the pressure-receiving large and small steel balls. To cope with jump-up phenomenon caused by directly unde earthquake or float-up phenomenon caused by typhoon etc., the hoop (1) is put on the foundation. The hoop (1), without striving against linkage of earthquake motions, supports colum (9) together

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with the foundation.

Because the steel balls (4) moves to the side of higher foundation pressure-receiving curved surface when the building moves due to hurricane, building mounted on the foundation, hoop (1) leans toward the wind pressure direction and increases resistance.

In addition, in order to completely achieve functions of this device, materials with properties of sodium silicate (8), etc., are filled with their properties of rust prevention, anti-freezing, and lubricant maintained are filled and functions of isolating earthquake are held semi-permanently.

The pressure applying and receiving steel plates

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are HRC50 and are free of dent when tested for
withstanding pressure at 1 ton using pressure-
receiving steel balls.

Concrete with strength of KGICM/700 are used.

When this invention apply to the colum with
cross section of 80cmx80cm, the pressure-receiving
force of 3, 200 ton is obtained.

STRUCTURING PROCESS OF THE INVENTION;

1. viscous materials with properties of rust pre-
vention is spread and coated onto the plane
steel plate on spherical curved iron and steel
flame adjusted so as to fit to a projected st-
ructer.
2. fit the hole cast in a projecting pole of

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position frame.

3. Insert all large balls (3) into large holes
4. Large balls (3) are kept free movement, then
all small balls are cast in free movement.
5. Suffice the NA2S108 to concrete mortar par-
tition plate by supply pipe, then steel plate
and block composed iron and steel frame are
piled on them.
6. Concaved and convexed slide blocks are put on
press ditch (Fig. 7) and press it by short-term
clamp bolt-nut by which concaved and convexed

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spherical surface are made.

7, Construct a provisional concrete frame, then
put concrete into above structured frame.

8, When applying weight reached to exceeding level
of steel plate repulsion, provisional frame is
solved.

9, Fundamental hoop (1) is connected to combined
hoop, tightening frame by scale of $1/4$ (Fig. 6).

By this proceeding the hoop aligns with earth-
quake motion and wind pressure successfully.

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SUPPORT STRUCTURE FOR ISOLATIONG
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WHAT I CLAIM IS;

A support structure for isolating earthquake motions, comprising a pressure-receiving steel plate of concave-curved surface adjusted with a bottom of a structure and a pressure-applying steel plate of convex-curved surface facing to said concave-curved surface, a means of interposing two types of pluralities of steel balls between said pressure-receiving curved surface and pressure-applying curved surface, one type of said plurality of steel balls are made with (less accuracy) smaller diameter than that of other

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group of balls, a means of mounting said two
groups of balls on said pressure-receiving
curved surface steel plate to come in point
contact in all direction, a means of covering
all the surface of top and bottom of steel plate
except the curved surface with concrete by which
forming a colum as a foundation of a const-
ructure, a means of applying convex curved
surface with a foundation of a construction by
bolts and nuts, a means of mounting a aligning
frame for said steel balls on a periphery of
said concave curved surface to allow said balls
to move freely, a means of isolating the linkage
of earthquake motion to the structure by unified

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simultaneous rolling of said two types of balls
interposed between said foundation pressure-
receiving upper surface steel plate and oppo-
siting pressure-applying bottom and steel plate
surface of said colum.

2. A support structure for isolating earthquake
motions as claimed in claim 1, a means of moving
the structural colum vertically by foundation
pressure-receiving curved surface thereby stop
the propagating slide movements by shock absorber
effect of spherical level difference (energy
generated) by which isolating the earthquake
motions and stopping the free movement.

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SUPPORT STRUCTURE FOR ISOLATING
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3. A support structure for isolating earthquake motions as claimed in claim 1;
a means of giving the foundation hoop a function of suppress the foundation column not to remove from the pressure receiving balls when jump-up phenomenon caused by directly under earthquake or float-up phenomenon caused by typhoon, in this case the hoop is on the foundation.